Falcons and Mud Flats

Photos and text by Fred Dobler and Rocky Spencer

The bleak winter sky over Grays Harbor provides the backdrop to a dramatic scene played out time and again by one of nature's rarest and most dynamic birds of prey — the peregrine falcon. The peregrine hovers high above a flock of frightened shorebirds — dunlins, sanderlings, western sandpipers or black-bellied plovers – as they ball up in a tight formation for protection against attack. Suddenly, the falcon wheels and "stoops," or dives, with fantastic speed — velocities of up to 150 miles per hour are common in such vertical attacks.

If the falcon misses its prey, it repeats its dizzying aerial performance again and again until it has what it came for. Once its strike is successful, the peregrine will fly away to eat the hapless prey clutched in its talons. Until its return, the whirling shorebirds will again probe for and feed on the myriad invertebrates that live in the mud of the harbor's tide flats.

Three subspecies of peregrine use the

86-square-mile Grays Harbor estuary, although it can be difficult in the field to correctly classify an individual bird. The American peregrine falcon and the Peale's falcon are winter residents. The arctic peregrine, smallest of the three, can be seen briefly from late March through mid-April as it follows migrating multitudes of shorebirds northward from wintering areas as far south as South America.

The American and arctic peregrines are on the state and federal endangered species lists, while the Peale's is listed as endangered in Washington.

Besides the Grays Harbor-Willapa Bay area, there are three other spots where peregrines concentrate in Washington during the winter — the Skagit flats, the northern Olympic Peninsula and the mouth of the Columbia River. In each case, prey is the most important aspect of the peregrines' winter habitat. In Grays Harbor, shorebirds — mostly dunlins — provide 50 percent of their prey, and they kill and eat songbirds, too.

A study by Steve Herman and John Bulger for the U.S. Army Corps of Engineers in the spring of 1981 revealed that up to a million shorebirds inhabit the estuary at a time. Shorebirds need mud flats in which to feed, and the huge tideflats of Bowerman Basin in Grays Harbor provide them with food longer in the tide cycle than any other part of the harbor. That is why the basin is so critical to the peregrine falcon. If any human activity were to seriously reduce the shorebird population, the endangered peregrine might disappear from this region.

Conservationists fear that the Grays Harbor shorebird populations will be threatened by the filling of Bowerman Basin for development. In 1979 the federal Office of Coastal Zone Management initiated the Grays Harbor Estuary Management Plan, the first of its kind in the country, to address the effects of future development in Grays Harbor. The plan's goals were to balance industrial and commercial development with recreational needs and wildlife habitat preservation, which had historically been ignored.

Conservation groups have opposed plans to fill much of Bowerman Basin for industrial expansion, contending that it would jeopardize the peregrines' continued existence in Grays Harbor by eliminating their food source. An alternative plan to fill a smaller portion of the basin was proposed, and the U.S. Fish and Wildlife Service found it acceptable.

Based on historical nesting records, Washington may have once had up to 13 breeding pairs of peregrines, but today we know of only three pairs. Similar declines have occurred nationwide. The use of pesticides like DDT may have significantly contributed to the trend. Many researchers believe peregrines that ate prey contaminated with DDT laid thin-shelled eggs that broke before they could be hatched.

Other factors may have included human disturbances such as agricultural development, which destroyed habitat and some prey species. Even the disappearance of the passenger pigeon, once a favored prey species, may have contributed to the peregrines' decline.

Many questions remain unanswered about the peregrines that winter on the Grays Harbor estuary. We conducted a study last winter to better understand the needs and habits of these birds and to identify their critical habitat. The research was partly funded through the federal endangered species program.

To begin our study at Grays Harbor, we used an Arabian falconer's net trap, called a "Dhogazza." We baited the trap with a live pigeon tied to a stake in the ground.

We only managed to entice one young male peregrine into the trap. One reason we were unable to catch any more may have been the extreme caution we used when trapping the birds. We passed up other opportunities to trap birds under more hazardous conditions, preferring to fail rather than risk injury or death to one of these endangered birds.

We attached a fingertip-sized radio transmitter to one of the falcon's tail feathers. Later, the transmitter would be shed, along with the feather, when the falcon molted.

We scouted every road that gave access to the harbor so we could trail the bird with our radio telemetry equipment and plot his whereabouts. We also used spotting 'scopes and binoculars to track the bird's wanderings as we followed him by truck and boat.

But this wasn't the only bird we ob-

Rocky Spencer

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Fred Dobler

A small radio transmitter was attached to this young male peregrine falcon's tail feathers to allow biologists to trace its wanderings. Later, the transmitter was shed, along with the feathers, when the bird molted.

served during our study. We saw no less than five peregrines at Grays Harbor that winter — an adult male, an adult female, two juvenile males and a juvenile female. At least one other peregrine would have been included in the study had it not been mistakenly shot in the morning half-light by a duck hunter at Ocean Shores a month before we began our project.

We spent long days and weeks, rising early to search shorelines, islands and mudflats for the peregrine's characteristic form and using evenings to prepare for the next day's activities. We had a standing wager; a bottle of Pepsi went to whoever sighted the first peregrine of the day (radio-tagged birds excepted).

Once we found one, the rule was to watch it with unblinking perseverance until it was out of sight. The cardinal sin was to look away and not be able to record the falcon's departure. We recorded more than 200 hours of actual observation time — most of it spent watching the radio-tagged bird because he was most easily found.

We recorded the falcon's movements from one perch to another, its flights and hunting attempts, noting exact locations and details. We collected prey remains from peregrine kills and from perches where we witnessed peregrines feeding. And from all this we formed a picture of the peregrine in Grays Harbor, although admittedly somewhat biased toward the juvenile male with the radio mounted on its tail.

The peregrines ranged over all of Grays Harbor, except for the southeast shore. In fact, in a single day a peregrine might cover nearly the entire harbor, beginning at Elk River, for example, then moving to North Bay and ending up at Bowerman Basin in the evening.

We found that Grays Harbor peregrines spend a lot of time perched on shoreline trees and snags, on shoreline banks and even on man-made structures, especially navigation markers near or over intertidal mudflats. And they spend a lot of time far out in the harbor, sitting on stumps and logs lodged in the mud.

Food availability influences the distribution of peregrines in Grays Harbor more than any other single factor. Bowerman Basin, with its high intertidal mudflats, attracts large numbers of dunlins. This area, along with nearby Mini-Moon Island, was used more consistently by peregrines as a feeding area than any other areas of Grays Harbor of comparable size. In January and February we saw peregrines at Bowerman Basin every day. Sometimes we watched as many as three falcons hunting the basin within a 15-minute period.

Other important areas for peregrine falcons included Whitcomb Flat, the mouth of the Humptulips River, Point New, North Bay, Elk River and Grayland Beach. All are areas where shorebirds congregate.

These observations provide strong support for the contention that the peregrine falcons' future in Grays Harbor depends on shorebird populations. If we are to keep peregrines there, we must protect them not only from illegal shooting, but from habitat loss. And we can only do that by preventing the loss of the mudflats that support the shorebirds in Grays Harbor and ultimately the falcons themselves. □

Fred Dobler and Rocky Spencer are nongame wildlife biologists, working on the Game Department's peregrine falcon study.